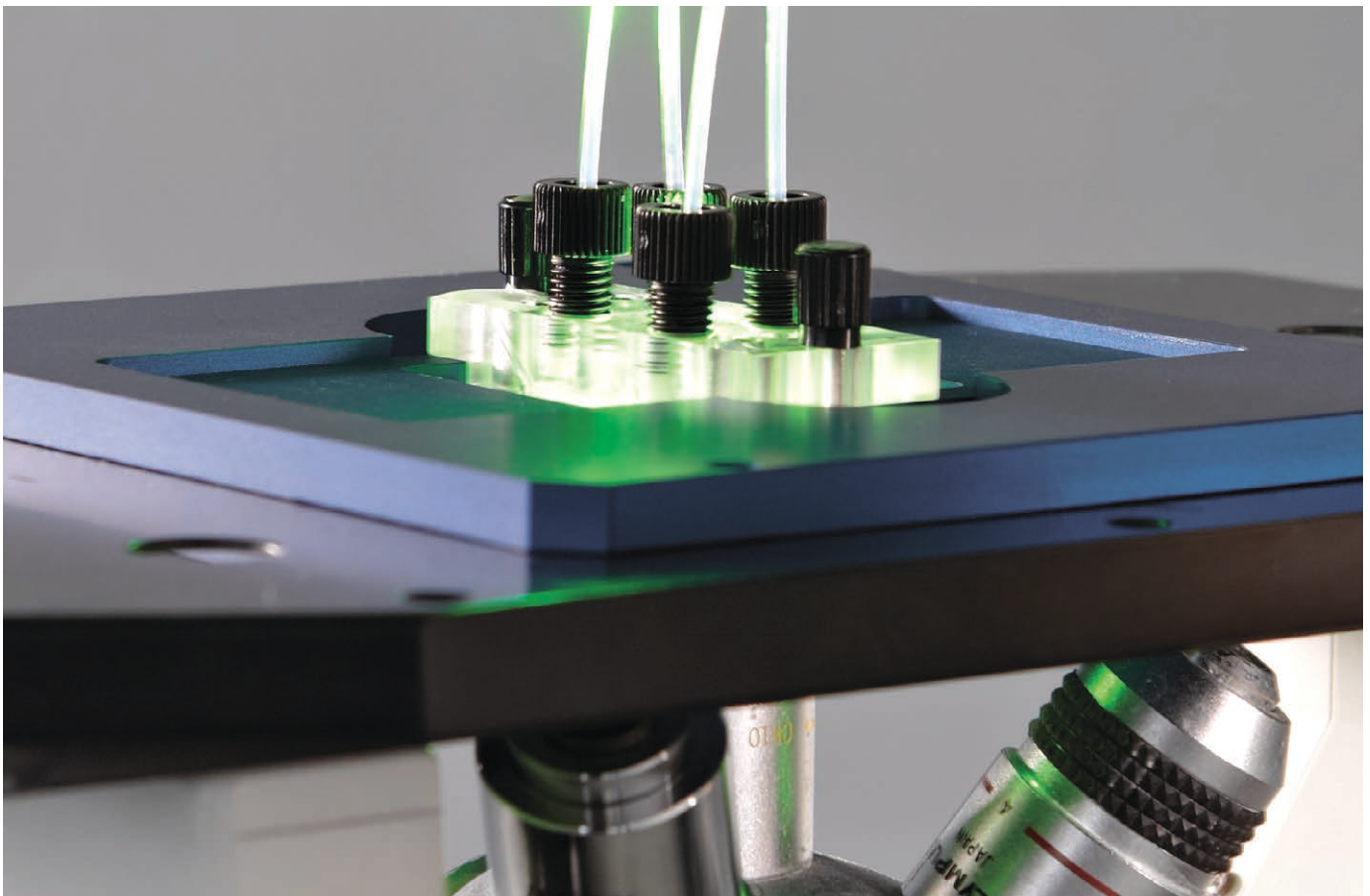


MicCell™

Product Overview

**Easy-to-Use and Versatile
Microperfusion System**



- **Versatile, modular, expandable perfusion system with microchannels made of polymers (e.g. PDMS), glass or silicon, also foil-based**
- **All peripherals (i.e. pumps, valves, tubes, fittings) are reused, making it extremely easy and cost-effective**

The MicCell microfluidic system is set up by casting a polymer channel plate, adding a coverslip, mounting it in the holder, and doing experiments. All in a matter of minutes. The MicCell is ideal for rapid prototyping: Creating a new channel requires only a new silicon master, which can be ordered from GeSiM.

The system is completed by a macrofluidic environment controlled by a GUI-based software and is customizable, using various materials, microvalves, microelectrodes, and more. Electrical signals can be processed or optical fibres added. A version for upright microscopes is available.

The currently very popular foil-based microfluidics is fully supported by the MicCell system. GeSiM can provide the most complicated customized multi-layer systems from various plastics, also in bulk quantities. Micro- or nanopore membranes can be included. Just contact us.



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MicCell



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15	Foil-Based Microfluidics

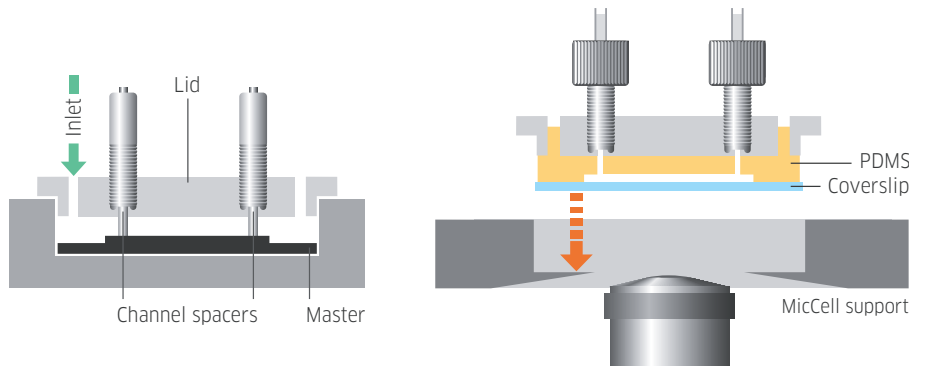
MicCell

Product Overview

MicCell – Microscope Interface Components

The GeSiM MicCell microfluidic system comes in a variety of designs, but the basic idea is always the same:

- The system must be mechanically adapted to your microscope, using the **work plate** into which the assembled MicCell is inserted. Different versions of this adapter plate for microscopes such as Zeiss, Olympus, Nikon etc. are available.
- The microchannel system is assembled and held together in a metal plate, the **MicCell support**. There is one for each channel plate size.
- We call the microfluidic system **PDMS channel plate (CP)**. You can buy pre-cast channel plates of different size or better cast them yourself in a casting chamber. In the assembled MicCell, the threaded holes of the lid serve as standardized chip-to-world interface.
- The channel plate is sealed by a coverslip (with or without electrodes) and mounted in the MicCell support, which is inserted in the work plate.
- In an upright microscope, the assembly is mounted upside down.



*Casting of the PDMS channel plate (left), by which the master structures produce channels in the PDMS, and its use as flow cell (right). Note that the holes through the PDMS layer must be held open by the **channel spacers**, which are replaced by regular fittings in the final MicCell.*

- Foil-based microfluidic systems have become very popular. GeSiM offers customized solutions and a modified MicCell for this; here a multi-layer foil-based microchannels system replaces the PDMS layer. These systems can be disposable. Please inquire for details.

This is the minimal configuration of the flow cell. You will probably add your own or our macrofluidic accessories (syringe pumps, macrovalves etc. in a **Fluid Processor**) and

microfluidic extras (e.g. hydrogel valves, pressure sensors), plus control software (see below), plus set-ups for electrodes or customized solutions. The entire system is modular and costs you little money.

Please contact us to find out which configuration is right for you.

A light microscope is not included.

MicCell Work Plate

A070-600

MicCell PDMS-CP

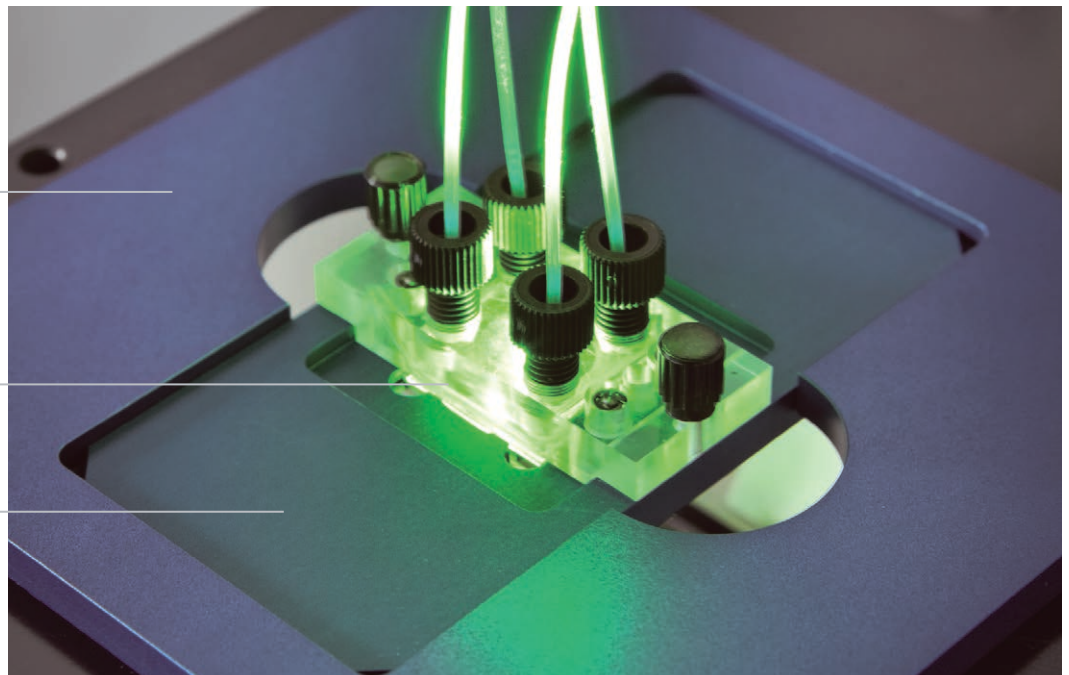
22x22

A040-106

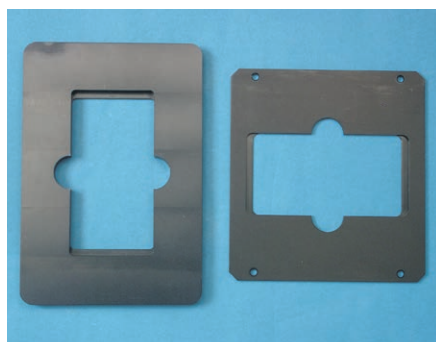
MicCell Support

22x22

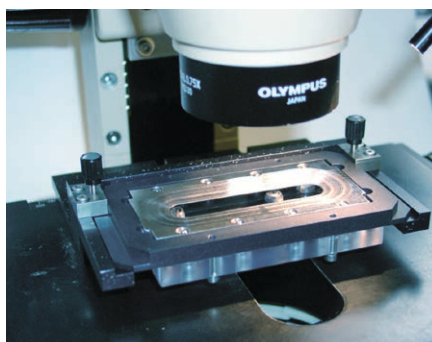
A040-018



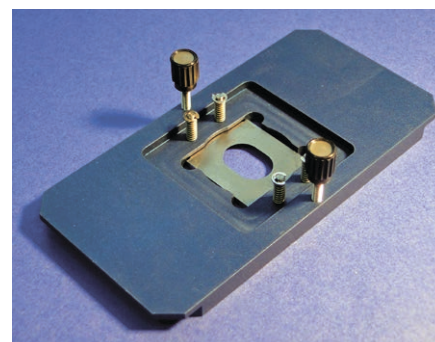
*MicCell (here: 22 mm x 22 mm) in an inverted microscope, consisting of work plate, support, channel plate (with lid), and tubes with fittings. This is the **minimal configuration**; further macrofluidic and microfluidic accessories can be added.*



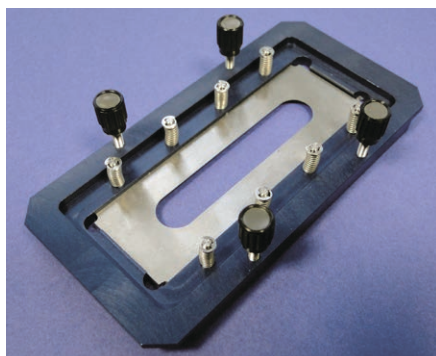
A070-600 Work plates for inverted microscope (standard design)



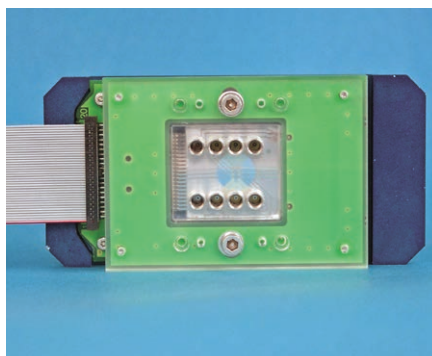
A070-610 Customized MicCell design for upright microscopes



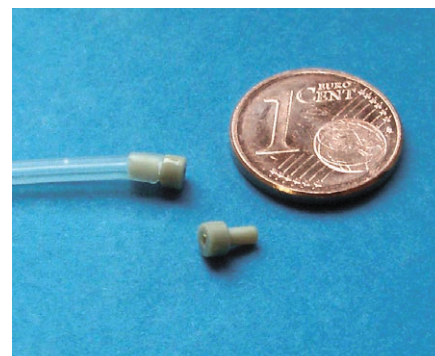
A040-018 MicCell support for 22x22 mm² coverslips



A040-026 MicCell support 25x75 mm²



A040-019 MicCell support with printed circuit board (PCB) to connect to electrodes on the coverslip, plus electrical connector to the outside world



A040-114 PEEK fluid connectors to connect silicone tubes

Article No.	Item	Remarks	Figure
MicCell - Microscope Interface Components			
A070-600	Work plate for inverted microscope	customized for user's inverted microscope	●
A070-610	Work plate for upright microscope	customized for user's upright microscope	●
A040-018	MicCell support 22x22 mm²	without PCB and connectors	●
A040-026	MicCell support 25x75 mm²	without PCB and connectors	●
A040-019	MicCell support PCB and connector	support with PCB to connect electrodes on the chip	●
A040-114	PEEK fluid connector	to connect silicone tubes ID 0.5..0.8 mm	●
MicCell - Fluid Processor			
A050-013	Fluidprocessor_1_0	1 syringe pump in 1-channel housing, not upgradable	●
A050-006	Fluidprocessor_2_0	2 syringe pumps in 4-channel housing, no change of housing in case of upgrade	
A050-004	Fluidprocessor_2_1	2 syringe pumps, 1x 4/1 selector valve	
A050-005	Fluidprocessor_4_0	4 syringe pumps in 4-channel housing	●
A050-007	Fluidprocessor_1_1 standard	1x syringe pump, 1x 4/1 selector valve, 1 x hydrogel microvalve, in 4-channel housing	●
A050-008	Twin-Fluidprocessor, 2xFP_3_3	two FP_1_1s in one 8-channel housing	
A050-010	Fluidprocessor_2_3		
A050-015	Upgrade 1 Smart Valve 1/4-Port	1x selector valve upgrade for Fluid Processor, no change of housing	
Please note that the Fluid Processors shown here have been replaced by a new generation of PLC-based ones (see end of document). Though you can still have the old ones, we encourage you to use the new ones because of the ease of use of the new software environment. Please inquire.			

MicCell

Product Overview

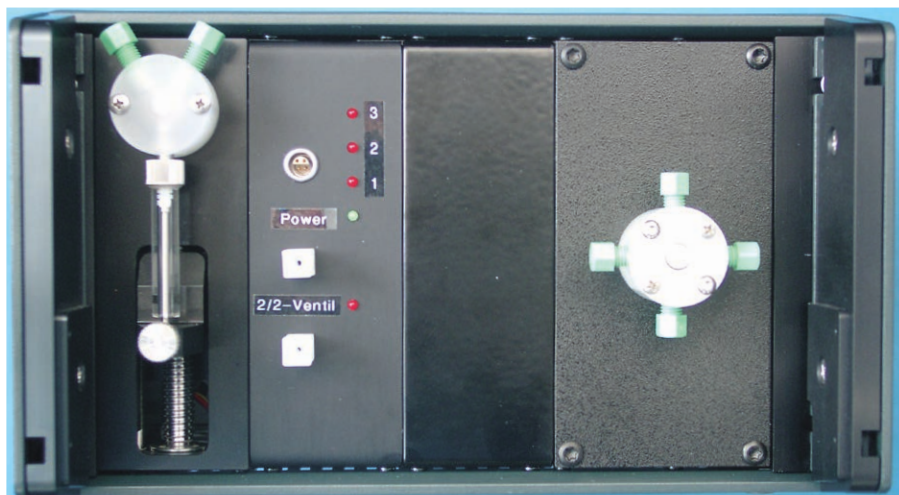
MicCell – Fluid Processor

The most reliable way to pump liquid through the channel(s) is by external syringe pumps. These pumps (with three-way-valves) and other microfluidic switching devices, such as simple valves (2/2) or selector (turn) valves (one inlet, multiple outlets or vice versa), are built in various combinations. Controller(s) for hydrogel microfluidic valve(s) can also be part of the device.

Fluid Processors are driven by a GUI-based **MicCell software** that controls all pumps and valves directly (interactive mode). Complex procedures can also be programmed by graphical means. Versions for various channel designs and also a new generation of Fluid Processors exist. Please see the end of this catalogue or inquire.

Syringe pump
module
Selector valve

A050-008 *Twin Fluid Processor. Two FP_3_3 systems are part of the system. Six syringe pumps and six selector valves are assembled in two cases.*



A050-007 *Fluid Processor FP_1_1_HGV. From left to right: syringe pump with three-way valve, control unit for a hydrogel valve and a simple (2/2) macrovalve in one rack, four-channel selector (turn) valve.*



A050-013 *Fluid Processor with a single syringe pump in a one-channel housing. This unit cannot be upgraded by additional modules.*



A050-005 *Fluid Processor with four syringe pumps, still old design*

Channel Plates – Different Size, Different Features

Different sizes and layouts of the MicCell channel plate are available. Standard off-the-shelf sizes are:

- 22 mm x 22 mm (normal coverslip)
- 22 mm x 50 mm (large coverslip)
- 25 mm x 75 mm (slide size)

Different sizes allow for different numbers of inlet and outlet ports. The 22x22 channel plate, for instance, normally has two inlets and two outlets; so to fit to this design, a single channel has an S-shape. You can get other set-ups, too.

The channel layout is defined by the silicon **master**, i.e. by you. If you order at GeSiM,

you pay for a full batch of masters that fit on a 4-inch (10 cm) wafer. GeSiM silicon masters are deep etched (reactive ion etching, RIE, Bosch process) and can have different resolutions (25 µm with photo-emulsion mask, or 2 µm with chrome mask). They are always **coated with PTFE** (Teflon) for easy demoulding.

If you own a casting station, you can make your own channel plate. If not, you can order pre-cast channel plates for immediate use. The PC body is recycled, thus reducing costs.

Channel plates from other materials (e.g. glass only) and with electrodes exist. And don't forget that we offer pre-assembled,

ready to use foil-based channel plates. And as these systems can be multi-layer and also contain filtration membranes, the possibilities are endless.

For more information on channel plate details and on ready-to-use channel plates, see the table on page 10 below.

Please also note that you can now order ready-to-use **foil-based** multi-layer microfluidic systems – according to your specifications. The only difference is that the MicCell must contain O-rings for sealing. Please inquire.

MicCell – Casting Stations and Flow Cells

Ordering and recycling pre-cast channel plates is cumbersome. You gain much higher flexibility by making your own gels in the GeSiM casting chambers:

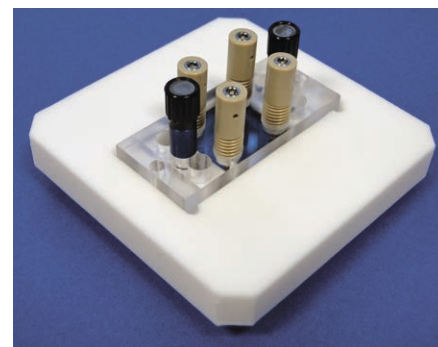
- The silicon master lies **under** the PDMS gel. So the order of assembly is: first the holder for the master ('calotte'), then the master, then the Teflon case, then the polycarbonate lid for the channel plate ('PC body', as it is from polycarbonate), all held together by screws.
- The liquid must pass through the PDMS layer to reach the channel, so holes must be created using **channel spacers**. These look like regular fittings, but have pins that are pressed against the master via springs.
- A mixture of silicone elastomer base and curing agent (crosslinker) is prepared, degassed, and injected into the gap between PC body and master.
- After curing, the channel plate (PC body with PDMS) is taken out and channel spacers and PDMS burs removed. The lid (also called 'body') stays on and is used in the microscope as chip-to-world interface.

- A coverslip is added and the stack fixed in the MicCell support by screws. The coverslip is pressed against the PDMS via springs and so the channel gets sealed. Finally, the MicCell support is inserted into the work plate sitting in your microscope and the tubes and other accessories connected to the MicCell.

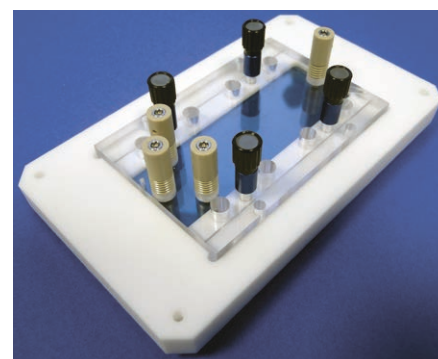
We recommend to purchase enough PC bodies so that you can cast a new PDMS channel plate while other ones are in use.

Accessories can be hydrogel microvalves (see below), connectors for heaters, sensors, and microelectrodes, a 'sample carrier' to observe opaque objects, to name a few.

Silicon masters are not part of the delivery. They are usually built to order. Prices depend on the necessary photomask. Pre-defined designs (e.g. single channel, T-channel, K-channel) are available; see table on page 14 at the end of the catalogue. Please inquire for details.



A040-054 Casting chamber 22x22, completely assembled, including channel spacers



A040-057 Casting chamber 25x75, completely assembled, including channel spacers

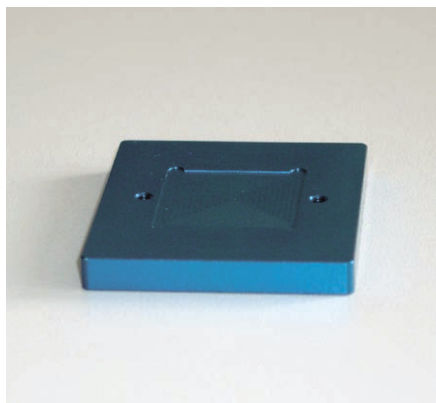
MicCell

Product Overview

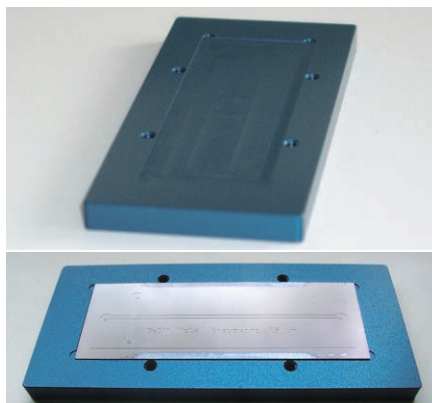
Article No.	Item	Remarks	Figure
MicCell – Casting Stations			
Complete Casting Station Sets			
A040-033	MicCell PDMS Casting Station 22x22	complete set, content see table 1 at the end of the document	●
A040-035	MicCell PDMS Casting Station 22x50	complete set, content see table 2 at the end of the document	
A040-012	MicCell PDMS Casting Station 25x75 (slide)	complete set, content see table 3 at the end of the document	
Casting Station Accessories			
A040-054	MicCell Casting Chamber 22x22	spare part to extend the casting station A040-033	●
A040-055	MicCell Casting Chamber 22x50	spare part to extend the casting station, A040-035	
A040-057	MicCell Casting Chamber 25x75	spare part to extend the casting station, A040-012	●
A040-020	MicCell Al calotte 22x22	aluminium plate to support the fragile master chip, type 22x22	●
A040-021	MicCell Al calotte 25x75	aluminium plate to support the fragile master chip, type 25x75	●
A040-022	MicCell Al calotte 22x50	aluminium plate to support the fragile master chip, type 22x50	
A040-091	MicCell Channel Spacer, diam. 1.6 mm, UNF1/4-28	part of the PDMS Casting Station	●
A040-092	MicCell Blind Spacer	Stopper fitting, UNF 1/4-28	●
A040-512	MicCell Desiccator, small	vacuum bell	●
A040-513	MicCell Vacuum Pump	for PDMS degassing	
A040-662	1 l Sylgard 184	1.1 kg, PDMS	●
A040-665	Adhesion promoter, Wacker 790G	for PDMS crosslinking	●



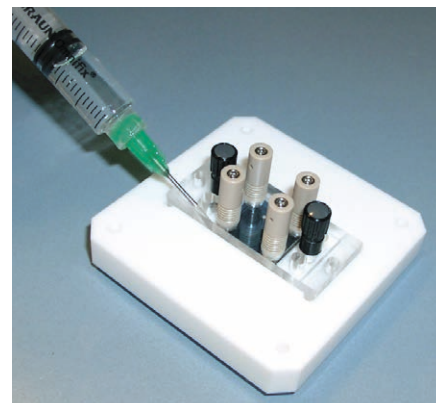
A040-033 Casting station for 22x22 PDMS-CP in a box, with all necessary accessories. Please note that 'casting chamber' only means the Teflon/aluminium case in which the casting takes place, whereas the 'casting station (complete set)' includes all accessories, as shown in the picture on the left.



A040-020 Aluminium calotte 22x22 for casting chamber, holds the fragile silicon master chip in the casting station



A040-021, -554 Aluminium calotte 25x75 for casting chamber (top) and filled with a 25x75 master (T-channel, bottom). The master should be glued to protect is from breaking.



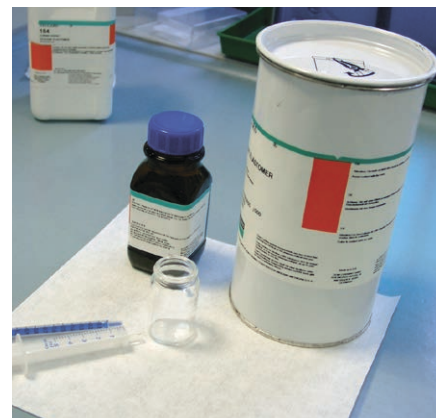
A040-054, -515, -519 Casting of a PDMS channel plate using a 5 ml syringe and a hypodermic needle (PDMS dispense tip)



A040-091 Channel spacer, 1.6 mm diameter, in UNF1/4-28 fitting, with a spring-loaded tip. Creates a hole in the PDMS layer during gel casting.



A040-092 Stopper fitting, UNF 1/4-28



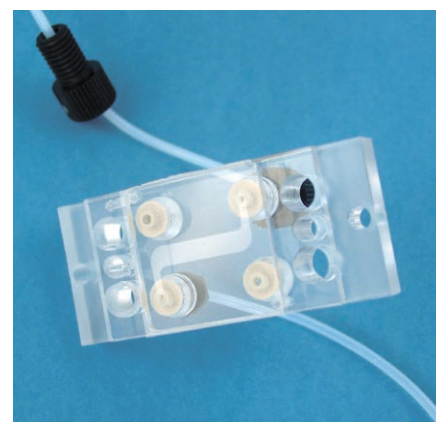
A040-662, -665 PDMS elastomer (Sylgard 184) and curing agent for gel casting, plus syringes and mixing glass



A040-512 Desiccator, small, to degas PDMS mixtures



A040-530 Desiccator, large, with N₂/UV inlets (discontinued)

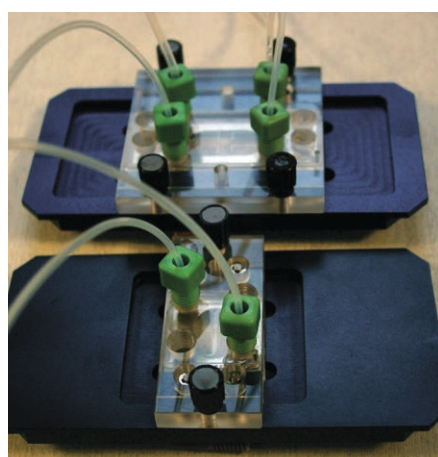


A040-105, -106 Ready-to use PDMS-CP, 22x22 mm², 3 mm S-channel (curved), shown with tubes and coverslip. New and recycled parts look the same..

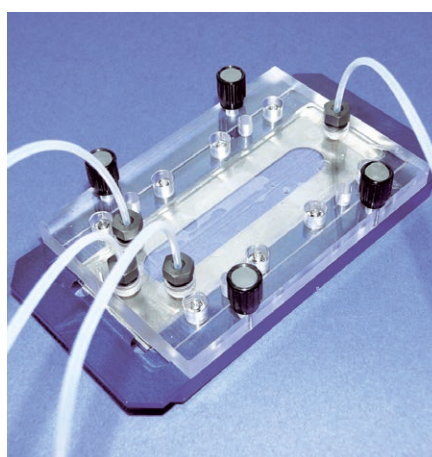
MicCell

Product Overview

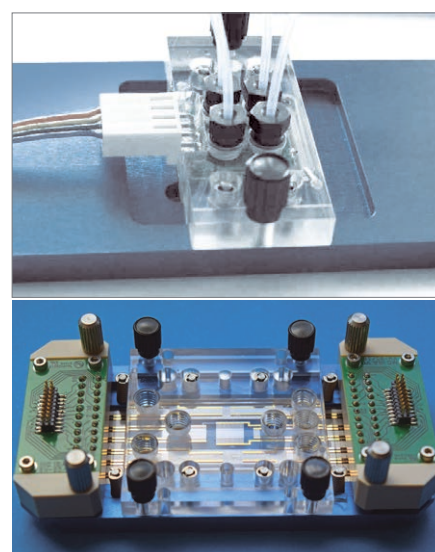
Article No.	Item	Remarks	Figure
MicCell – Flow Cells			
Type: PDMS Channel Plate			
A040-106	PDMS-CP 22x22, new	PDMS-CP, ready to use, max. 4x UNF1/4-28 inlets	●
A040-105	PDMS-CP 22x22, recycled	used body, new PDMS layer	●
A040-108	PDMS-CP 22x50, new	PDMS-CP, ready to use, max. 6x UNF1/4-28 inlets	●
A040-111	PDMS-CP 22x50, recycled	used body, new PDMS layer	●
A040-115	PDMS-CP 25x75, new	PDMS-CP, ready to use, max. 10x UNF1/4-28 inlets	●
A040-116	PDMS-CP 25x75, recycled	used body, new PDMS layer	●
A040-715	PDMS-CP with O ₂ -bonded coverglass	PDMS and glass, irreversibly bonded (e.g. for multi-organ chip, MOC)	(●)
A040-107	PDMS-CP for Sample Carrier	special design for sample carrier (inquire)	●
A040-083	MicCell Sample Carrier	see figures	●
A040-112	PDMS-CP 22x22, 4 inlet electrodes	PDMS-CP, inlets electrically conducting, with PCP and connector	●
A040-540	Au contact fitting, UNF1/4-28		●
A040-541	Ag/AgCl contact fitting, UNF1/4-28		●
A040-542	Pressure sensor fitting, UNF1/4-28		●
A040-109	PC body for PDMS-CP 22x22	PC body (PC = polycarbonate), ready for PDMS casting at customer site	●
A040-110	PC body for PDMS-CP 22x50	PC body with 10 inlets/outlets, ready for PDMS casting at customer site	●
A040-025	PC body for PDMS-CP 25x75	PC body with max. 10 inlets/outlets, ready for PDMS casting at customer site	●
A040-023	Al body for PDMS-CP 25x75	aluminium body, ready for PDMS casting at customer site	●
Type: Glass-Glass Channel Plate (Examples)			
A040-053	Glass-glass CP, μ -electrodes on one side	dielectrophoretic field cage, "DFC3-Pt-FR-30-S" (S = standard)	●
A040-056	Glass-glass CP, μ -electrodes on both sides	dielectrophoretic field cage, "DFC4-Pt-FR-30-S" (S = standard)	●
Type: Silicon-Glass Channel Plate (Example)			
A040-017	SOG (silicon on glass) flowthrough chip	CAD from GeSiM design library, based on a 4" Si wafer (normally 8 chips)	●



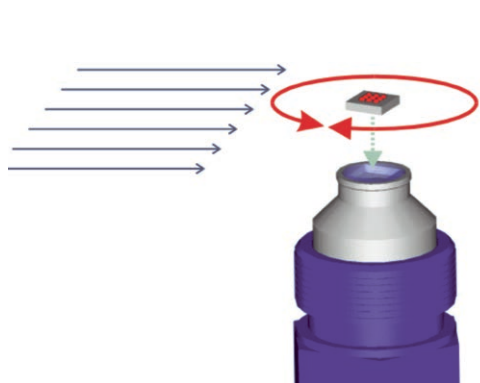
A040-106, -108 MicCell channel plates 22x22 and 22x50 in comparison, each mounted in its support. New and recycled CPs look the same.



A040-115, -116, -026 PDMS channel plate, 25x75 (slide size), in MicCell support; here with 3 inlets and 1 outlet



A040-112 PDMS CP 22x22 with four inlet electrodes, in MicCell support (top). The bottom picture shows interdigitated gold electrodes for impedance measurement.



A040-083, -107 The sample carrier can bring opaque objects (up to 2.5x2.5 mm²) into the flow channel; the sample must be illuminated from the objective side. The specimen can be rotated by 360°. Picture left, principle; centre, sample carrier outside channel with silicon samples; right: sample carrier screwed into its special 22x22 MicCell PC body. Please inquire for more information or other configurations.



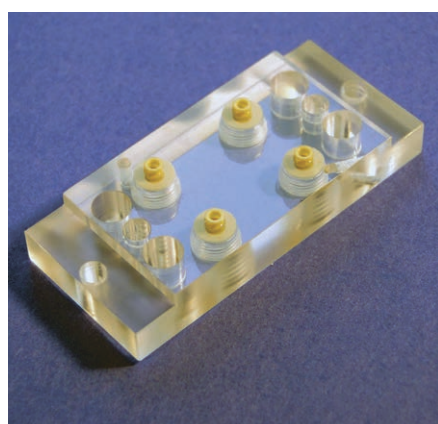
A040-540 UNF1/4-28 fitting with Au contact



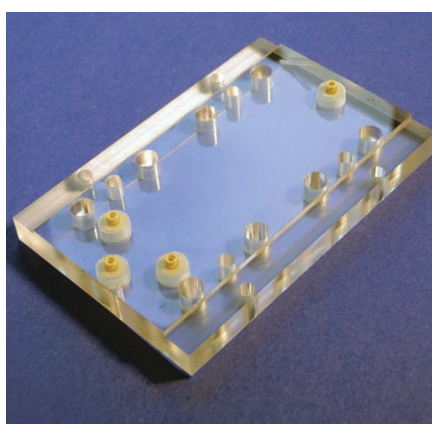
A040-541 UNF1/4-28 fitting with Ag/AgCl contact



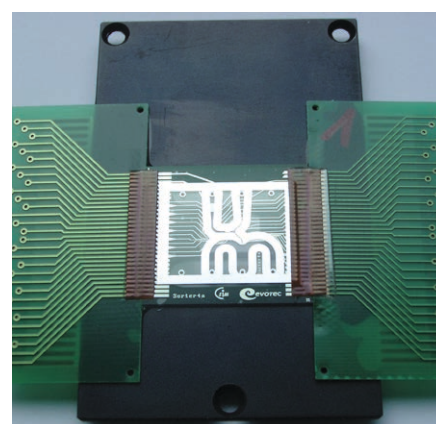
A040-542 Pressure sensor fitting, UNF1/4-28



A040-109 PC body (lid) for PDMS-CP 22x22



A040-025 PC body (lid) for PDMS-CP 25x75



A040-056 Glass-glass channel plate, permanently bonded; microelectrodes on both sides of channel, wire-bonded PCBs. This is a DFC (dielectrophoretic field cage) chip for the trapping and analysis of particles/cells.

MicCell

Product Overview

Microvalves

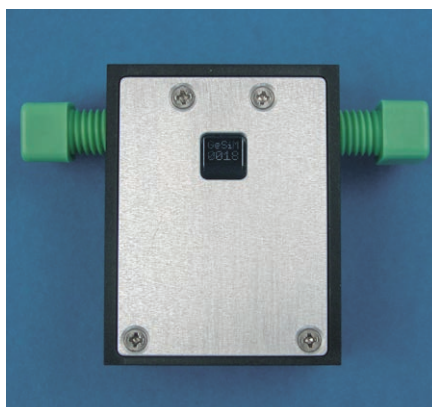
For controlled injection of liquids into a microchannel, e.g. to start and stop reactions, a **hydrogel microvalve** (HGV, GeSiM patent) with small dead volume is placed into the standard (UNF1/4-28) MicCell inlets. It contains hydrogel particles that dramatically shrink (dehydrate) above 34 °C, thus opening the valve. In the primarily used PV6 HGV, liquid passes through holes etched into the actuator chamber.

- Hydrogel: ground and sieved particles of pure *N*-isopropylacrylamide, switching at 34 °C (→ normally closed valve at RT), for neutral aqueous solutions; resistant to many solvents
- Heating power 250 mW via Pt thin film heaters, switching time 1 - 3 seconds, watertight up to 500 kPa (5 bar)
- Temperature control using built-in PT100 sensor by a module in the Fluid Processor

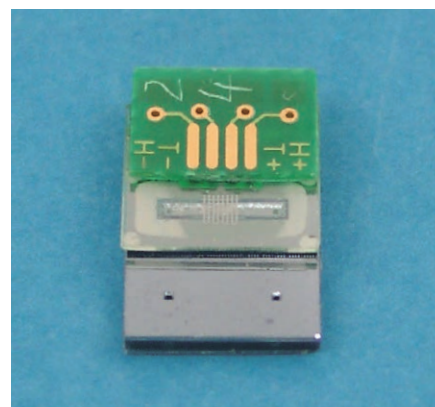
A **turn valve** with PDMS rotor (A040-155) is also available; please ask for details.



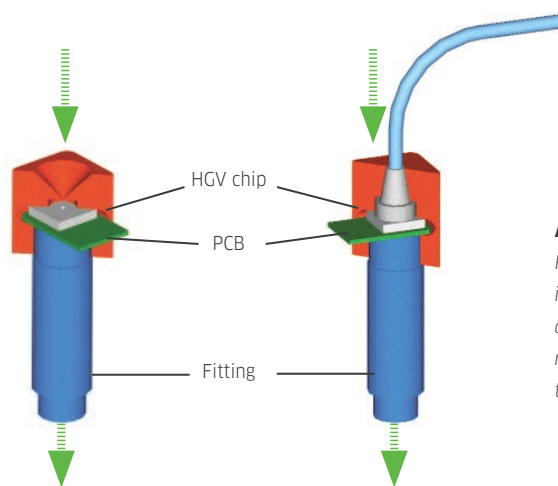
HGV PV6 actuator chamber, with platinum heater and temperature sensor structures, filled with hydrogel particles, before assembly



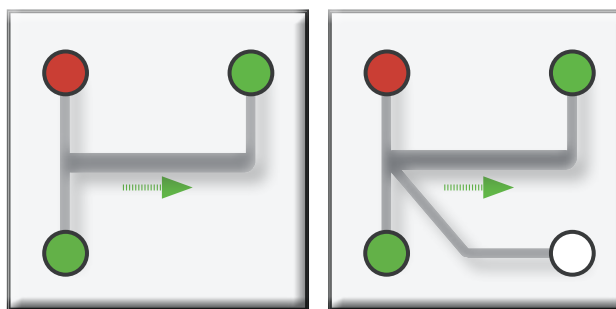
A040-080 HGVPV5, complete microvalve in PEEK housing, with UNF1/4-28 tapped holes



A040-501 HGVPV5, naked chip. Note the meandering Pt heater above the channel. In contrast to PV6, the liquid flows horizontally through the chip

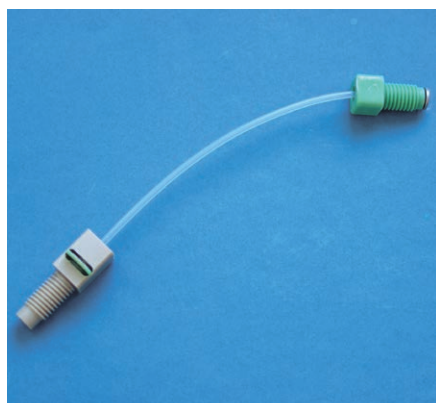


A040-81, -100 HGVPV6 in UNF fitting. Left, injector for manual sample addition via micro-funnel; right, sample injection through tube.



A040-550, -551 Sample injection into a T-channel. The main flow is stopped; then the HGV (red inlet) opens and the sample is sucked in. The extra K-channel (white outlet) is used to flush the dead volume between HGV and T-junction.

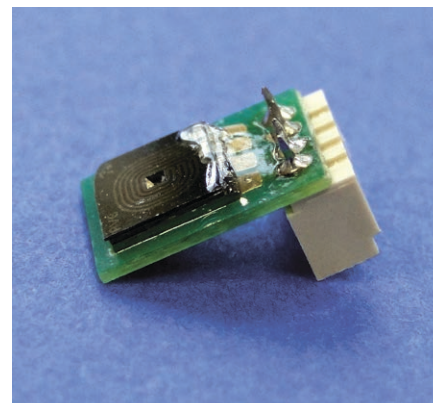
Article No.	Item	Remarks	Figure
Microvalves			
A040-080	Hydrogel Valve PV5	complete μ -valve with PEEK housing and UNF1/4-28 fittings	●
A040-081	Hydrogel Valve PV6, PEEK housing	complete μ -valve with PEEK housing, based on UNF1/4-28 fitting	●
A040-100	Hydrogel PV6 Micro-Injector	complete μ -valve, housed in PEEK injector fitting UNF1/4-28	●
A040-082	PEEK housing	for Hydrogel Valve, PV5 and PV6	(●)
A040-501	Hydrogel Valve PV5, naked chip	spare part for A040-080	●
A040-101	Hydrogel Valve PV6, naked chip	spare part for A040-081, without housing	●
	PDMS rotary valve	microfluidic selector valve with PDMS sealing; on request	



A040-081 HGV PV6, complete valve housed in PEEK fitting (UNF1/4-28) with tube connection



A040-100 Hydrogel valve PV6, complete micro-valve housed in PEEK injector fitting UNF1/4-28. Sample is filled into the 'funnel' at the top.



A040-101 Hydrogel valve PV6, naked chip with electrical socket

Masters, Disposables, Software and Casting Stations

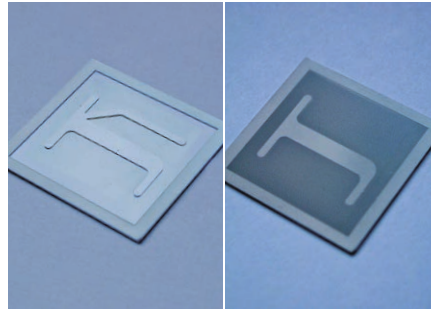
Article No.	Item	Remarks	Figure
MicCell – Masters for PDMS Channel Plate			
A040-030	Micro-Master, lateral pattern > 1 µm	includes custom CAD, Cr-mask, processing; based on 4"-Si wafer	
A040-550	Master, S-T-K channel, 22x22	mask is part of GeSiM design library, 4" Si wafer	●
A040-551	Master, T-channel, 22x22	mask is part of GeSiM design library, 4" Si wafer	●
A040-552	Master, 2Y channel, 22x22	mask is part of GeSiM design library, 4" Si wafer	(●)
A040-553	Master, 3-channel design, 22x50	mask is part of GeSiM design library, 4" Si wafer	
A040-554	Master, T-channel, 25x75	mask is part of GeSiM design library, 4" Si wafer	●
MicCell – Disposables			
A040-027	150 µm coverslip, silicone rubber seal	batch based on 4" glass wafer	
A040-104	150 µm coverslip, SiO ₂ -passivated Pt-electrodes	batch based on 4" glass wafer; Pt 100 nm / SiO ₂ 600 nm	
A040-103	150 µm coverslip, ITO electrodes	batch based on 4" glass wafer, without SiO ₂ coating	
A040-034	150 µm coverslip, ITO coated	22x22 or 25x25 mm ² , fully coated with ITO 100 nm	
A040-044	Pure coverslip, 150 µm	customised size, cut from 4" glass wafer	
A040-514	MicCell PDMS syringe 5 ml	disposable injection syringe for PDMS base	(●)
A040-515	MicCell needle for PDMS injection, green	disposable dispenser needle for mixed PDMS	(●)
A040-516	MicCell PDMS syringe 1 ml	disposable injection syringe for PDMS crosslinker	(●)
A040-517	PDMS mixing glass for PDMS, 20 ml	disposable mixing glass to prepare max. 8 ml PDMS/crosslinker	(●)
A040-518	PDMS dispense tip, pink, conical	disposable	
A040-520	PDMS dispense tip, green, conical	disposable	(●)
A070-560	Natural 1/16" flangeless ferrule		
MicCell Software			
A070-087	MicCell Software, "Mixing Project"	supports 3 syringe pumps, interactive mode only, can be customised; details on request	
A070-089	MicCell Standard Software	supports projects with S/T/K channels, interactive and programming mode, user manual	●
A070-097	Software "FC1"	only to drive syringe pumps	●

MicCell

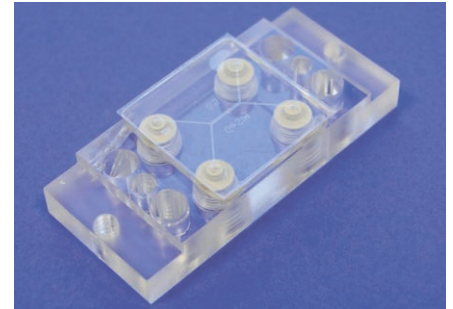
Product Overview

GeSiM has a library of channel designs from which you can choose. In this case no charges for the photolithography mask for the master apply. Customized designs or which new photomasks are needed are possible; please inquire.

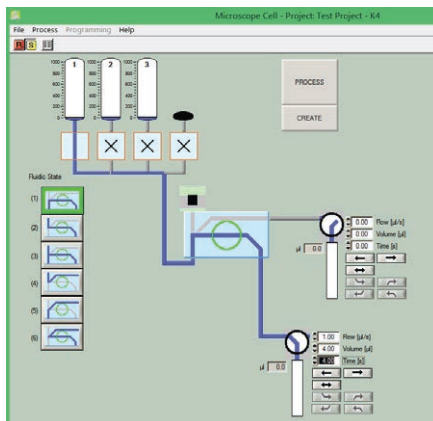
All masters are deep reaction ion (RIE) etched on a 10 cm (4") silicon wafer, teflonised for better demoulding, and cut for immediate use. We therefore charge all process steps per 4-inch wafer, so you can put as many different masters on a wafer as fit on it.



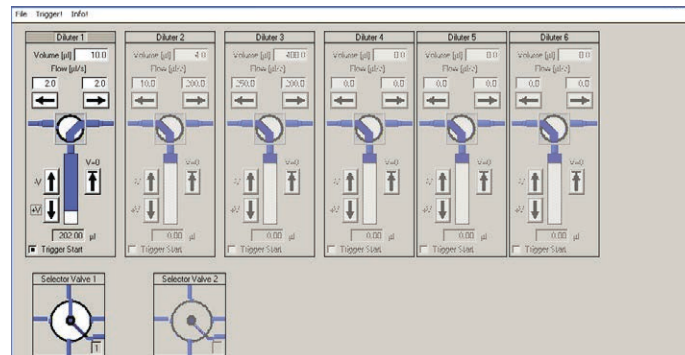
A040-550, -551 22x22 master with K-channel design (left) and 22x22 master with t-channel design (right)



A040-552 PDMS-CP with attached coverslip, moulded from a master with 2Y channel design



A070-089 The old MicCell software ("S-T-K project"), with two diluters and hydrogel valve. It can control S-channel, T-channel with two inlets, or K-channel (see above). Flow schemes are selected by the buttons on the left.



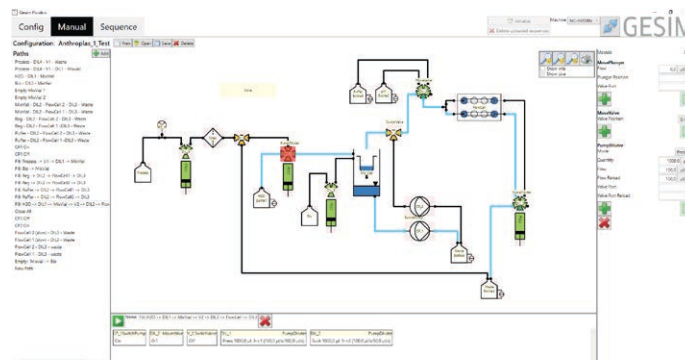
A070-097 FC1 software to control up to six diluters and two selector valves. No channel layout is associated with this software, only diluters and valves are controlled.

Although the old software is still available for price-conscious customers, GeSiM does not develop it any further. Instead we have developed a new microfluidic control system based on a commercial programmable logic controller (PLC) and a novel GUI. The microfluidic system can be PDMS- or foil-based.

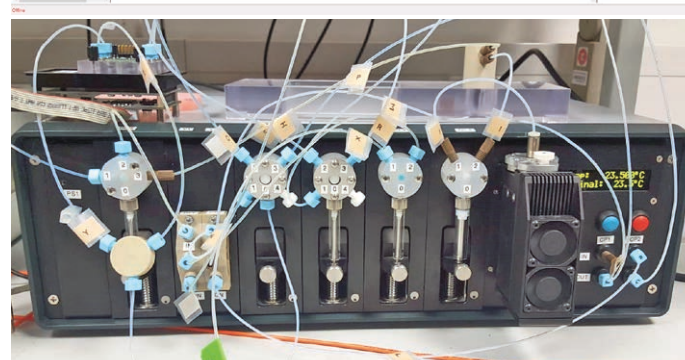
Now it is much easier and more straightforward to run your systems (no restrictions by pre-configured set-ups).

To configure your application, simply copy the required (pre-configured) tools into your scheme. You can control the system directly (on the 'Manual' page) or compile an automatically processed sequence of events (on the 'Sequence' page). The handling could not be simpler, and available devices are endless: various valves (2/2, selector etc.), pumps (diluters), liquid level sensors, etc.

Please inquire if you are interested in this sophisticated system.



Example of the new GUI, here manually controlling a plasmonic biosensor



The corresponding experimental set-up of F-box (with syringe pumps and diverse valves) and flow cell (on top of the F-Box) is shown on the left (project 'ANTHROPLAS', funded by BMBF).

Article No.	MicCell – Casting Stations (Details of Shipment)	Figure
A040-033 MicCell – Casting Station for 22x22 PDMS-CP, boxed		
A040-109	MicCell 22x22 PC body, 4 inlets	●
A040-054	MicCell Casting Chamber 22x22, aluminium/Teflon	●
A040-517	MicCell PDMS mixing glass, 20 ml	(●)
A040-518	MicCell PDMS dispense tip (hollow needle)	(●)
A040-091	MicCell Channel Spacer, UNF1/4-28 fitting	●
A040-044	Pure coverslip, 150 µm (custom-cut from 4" glass)	(●)
A040-516	MicCell PDMS Syringe 1 ml	(●)
A040-514	MicCell PDMS Syringe 5 ml	(●)
A040-662	PDMS, 1 l Sylgard 184	●
A040-665	Adhesion promoter Wacker 790G	●
A040-512	MicCell Desiccator, small	●
A040-092	MicCell Blind Spacer (PEEK stopper fitting)	●
A040-035 MicCell – Casting Station for 22x50 PDMS-CP, boxed		
A040-108	MicCell 22x50 PC body, 4 inlets	●
A040-055	MicCell Casting Chamber 22x50, aluminium/Teflon	●
A040-517	MicCell PDMS mixing glass, 20 ml	(●)
A040-518	MicCell PDMS dispense tip (hollow needle)	(●)
A040-091	MicCell Channel Spacer, UNF1/4-28 fitting	●
A040-044	Pure coverslip, 150 µm (custom-cut from 4" glass)	(●)
A040-516	MicCell PDMS Syringe 1 ml	(●)
A040-514	MicCell PDMS Syringe 5 ml	(●)
A040-662	PDMS, 1 l Sylgard 184	●
A040-665	Adhesion promoter Wacker 790G	●
A040-530	MicCell desiccator	●
A040-512	MicCell Desiccator, small	●
A040-092	MicCell Blind Spacer (PEEK stopper fitting)	●
A040-012 MicCell – Casting Station "Slide", for 25x75 PDMS-CP, boxed		
A040-025	MicCell 25x75 PDMS body	●
A040-057	MicCell Casting Chamber 25x75, aluminium/Teflon	●
A040-517	MicCell PDMS mixing glass, 20 ml	(●)
A040-518	MicCell PDMS dispense tip (hollow needle)	(●)
A040-091	MicCell Channel Spacer, UNF1/4-28 fitting	●
A040-044	Pure coverslip, (25x75x0,3) mm ³	(●)
A040-516	MicCell PDMS Syringe 1 ml	(●)
A040-514	MicCell PDMS Syringe 5 ml	(●)
A040-662	PDMS, 1 l Sylgard 184	●
A040-665	Adhesion promoter Wacker 790G	●
A040-512	MicCell Desiccator, small	●
A040-092	MicCell Blind Spacer (PEEK stopper fitting)	●

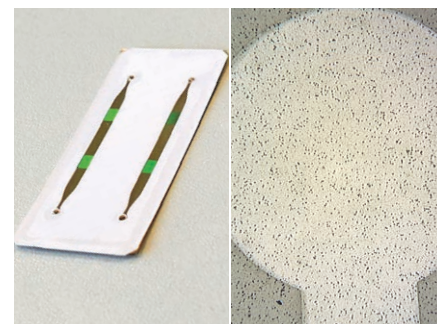
This catalogue does not show all possibilities of the system. Please inquire if you wish to customise the MicCell configuration or if you need more specialised microsystems technology service.

Foil-Based Microfluidics

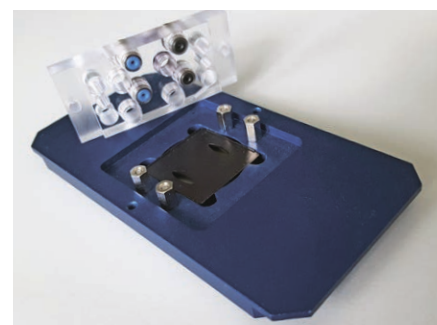
You can vastly expand your toolbox and be up and running quickly by using foil-based microfluidics:

- Made of different materials (e.g. polycarbonate)
- Transparent/non-transparent, without/with adhesive
- Foils are cut by a blade or (better) by a laser.
- Foils are accurately aligned in our lab and laminated
- Complex multi-layer structures possible
- Large quantities (disposables) possible
- Option: very selective nano- and micro-pore membranes made by 'track-etching' with heavy ions (Oxyphen AG), e.g. for filtration

Please inquire for availability and prices.



Left: simple 75x25 foil-based system consisting of (1) a bottom layer with gold-coated plasmonic sensors (made by nanoimprint lithography with a GeSiM µCP), (2) a white channel layer, and (3) a transparent top layer with holes. The right picture shows an enlarged picture of an Oxyphen micropore membrane attached to a channel layer.



MicCell support (blue) and transparent polycarbonate body with O-rings for foil-based 22x22 microfluidic systems

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